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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,700

05/05/2006

Gilbert Zumsteg

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EXAMINER

HOWELL, DANIEL W

ART UNIT

PAPER NUMBER

3726

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/595,700	<b>Applicant(s)</b> ZUMSTEG ET AL.	
	<b>Examiner</b> Daniel W. Howell	<b>Art Unit</b> 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 15-20, 28, 29 and 34-40 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 15-20, 28, 29 and 34-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5-5-06</u> . | 6) <input type="checkbox"/> Other: ____.  |

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1. Claims 1-4, 15-20, and 36-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Each of claims 1, 15, and 36 set forth the formula  $h(\text{max}) = 6\text{mm} + 0.1 \times (D1 - 12\text{mm})$ , such that no upper limit is set. However, paragraph [0014] sets forth a circumstance in which  $h(\text{max})$  is never larger than 8 mm. The independent claims setting forth the formula need to reconcile these two pieces of information.
2. Claim 38 is objected to because of the following informalities: on the last line of claim 38, “that” should be changed to “than.” Appropriate correction is required.
3. Claims 1-4, 15-20, and 34-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As discussed above, paragraph [0014] sets forth an upper limit for a particular circumstance, and the claims reciting the formula need to provide provision for that upper limit. Claim 16 improperly sets forth a first range and then a second range, such that it is not clear which is being claimed. In claim 19, the scope of the phrase “such as” can not be determined.
4. The drawings are objected to because the separate parts of figures 4-6, 9, 11-13, and 15-17 need to be labeled separately. Note that this will require a corresponding change to the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the

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sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. There is established case law stating that unless patent drawings are explicitly stated as being drawn to scale, then it is improper to treat them as if they are to scale. That being said, there are numerous references in the prior art which have drawings drawn to a scale which would satisfy the formula which has been set forth in several of the claims. When numerous references show the same general proportions or dimensions, one can't easily dismiss that as a coincidence. There are three references of record to an inventor named Christman, those patent numbers ending in '571, '572, and '573. It is noted that each of the figure 1 drawings from the three Christman patents are very similar, but they clearly are not the same drawings, as each is slightly different than the other. All three of the Christman cutters have very similar proportions, and it is difficult to dismiss this as merely a coincidence. In view of the fact that Christman has provided three separate patents showing the desired proportions, the examiner will take a somewhat stronger position than usual that the drawings of Christman are indeed to scale.

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6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Ray (1797296).

Shaft 10 has a conical portion/connection lug 22, an end plane 30. Lines 1-7 of column 1 state that the tool holder holds an annular tool, and a trimming cutter is illustrated, but the device is capable of holding a reaming tool.

8. Claims 1, 15, 16, 17, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Christman (2164573). Note shaft 23 and head 20. As stated at page 2, column 1, lines 28+, the cutter is of a width **about one-fifth to one-sixth its diameter**. It is thus clear that Christman '573 will meet the formula for a very wide range of diameters. Cutout 50 is a connection element that permits fastener 24 to center the cutter on the shaft 23.

9. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/25173. Shaft 1 has a conical connection lug 3, end face 4, a cutter 2, and a fastening screw 11. The device is capable of holding other types of cutters, including reaming tools.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 29, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '173. Noting that larger and smaller workpieces may require larger or smaller tools, it is

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considered to have been obvious to have made the axial length of the conical projection of a dimension appropriate for the size of workpiece being machined. As screw 11 is tightened down, the lug will be placed in compression by the conical surface 5.

12. Claims 1, 15, 16, 17, and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Christman '571. As discussed above, Christman had two other patents showing very similar cutters, with all of the cutters being of nearly the same proportions, such that the examiner will take a stronger stance that the drawings of Christman are drawn to scale. The hole shown in figure 1 is of a size which would regularly require reaming in industrial situations. The cutter head 10 has a diameter of 17 mm and a thickness of 4 mm. Given the claimed formula, the maximum thickness for a cutter head having a diameter of 17 mm would be 6.5 mm, and the 4 mm thickness of the head 10 is well thinner than that. Should it be determined that this is not correct, then it is also noted that lines 3+ of page 2 state that the annulus is preferably of a width/thickness several times less than its diameter. Given a 17 mm diameter, and providing that "several times less" is "three times less," that would mean that the thickness would be under 6 mm also, still meeting the formula. It is considered to have been obvious to have provided appropriate experimentation for a given diameter of cutter head to provide an adequate thickness of the cutter 10 that will properly guide itself while cutting the hole to the desired surface quality. Note cutout 17. The cutter does not have an axial lug.

13. Claims 2-4, 18, 36, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christman '571 in view of WO '173. As stated at the last two lines of page 1 of Christman '571, any suitable means can be provided for fixing the cutter to the shaft. WO '173 shows a

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similar shaft 1 and cutter 2, the shaft having a projecting conical lug 3 that seats in a conical opening 5 in the cutter. As screw 11 is tightened down, the lug will be placed in compression by the conical surface 5. Regarding claim 37, fastening screw 12 is sunk relative to the top face of the cutter 2. It is considered to have been obvious to have provided Christman '571 with a conical connection as taught by WO '173 as this is a simple substitution of one known element for another in order to obtain a predictable result, and as Christman has explicitly stated that any suitable connection may be used. Regarding claim 38, it is considered to have made the projection of a dimension suitable for the size of the cutter.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over either of Christman '571 or '573 in view of Reinauer et al (5599145). Neither of the Christman references appears to explicitly state a material for the cutter. Reinauer et al shows a cutting insert 25, and as stated at column 8, lines 35-40, it is known to sinter such cutting inserts or make them of hard metals, ceramic, or cermet. It is considered to have been obvious to have made the cutter of either of the Christman references of the materials set forth by Reinauer et al in order to provide a durable cutting insert.

15. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over either of Christman '571 or '573 in view of JP 10-309616. As stated at the last two lines of page 1 of Christman '571, any suitable means can be provided for fixing the cutter to the shaft. Both of the Christman references show bolt heads that extend in front of the front plane of the cutter. At page 1, column 2, lines 45-51, Christman '571 briefly discusses how the bolt 13 has been designed to aid in chip flow. JP '616 shows a similar rotary tool in which the cutting insert 7 has been provided with a cutout for screw head 6a, such that the screw does not interfere with the

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cutting action. It is considered to have been obvious to have provided either of the Christman references with the connection as taught by JP '616 as this is a simple substitution of one known element/connection for another in order to obtain a predictable result, and as Christman has explicitly stated that any suitable connection may be used.

16. Claims 20 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Christman '571 or '573 in view of McCoskey (2937575). As stated at the last two lines of page 1 of Christman '571, any suitable means can be provided for fixing the cutter to the shaft. Both of the Christman references show bolt heads that extend in front of the front plane of the cutter. McCoskey shows an annular cutter 24 which is secured to a rotary drive shaft 5 by four bolts extending through holes in the cutter. It is considered to have been obvious to have provided either of the Christman references with the connection as taught by McCoskey as this is a simple substitution of one known element/connection for another in order to obtain a predictable result of securing the cutter on a shaft, and as Christman has explicitly stated that any suitable connection may be used.

17. Any inquiry concerning the content of this communication from the examiner should be directed to Daniel Howell, whose telephone number is 571-272-4478. The examiner's office hours are typically about 10 am until 6:30 pm, Monday through Friday. The examiner's supervisor, David Bryant, may be reached at 571-272-4526.

In order to reduce pendency and avoid potential delays, Group 3720 is encouraging FAXing of responses to Office actions directly into the Group at FAX number to 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Daniel Howell of Art Unit 3726 at the top of your cover sheet.

/Daniel W. Howell/

Primary Examiner, Art Unit 3726